



DTLTM
(Dry Gas To Liquids)
Technology

Capture Value from Dilute Olefins

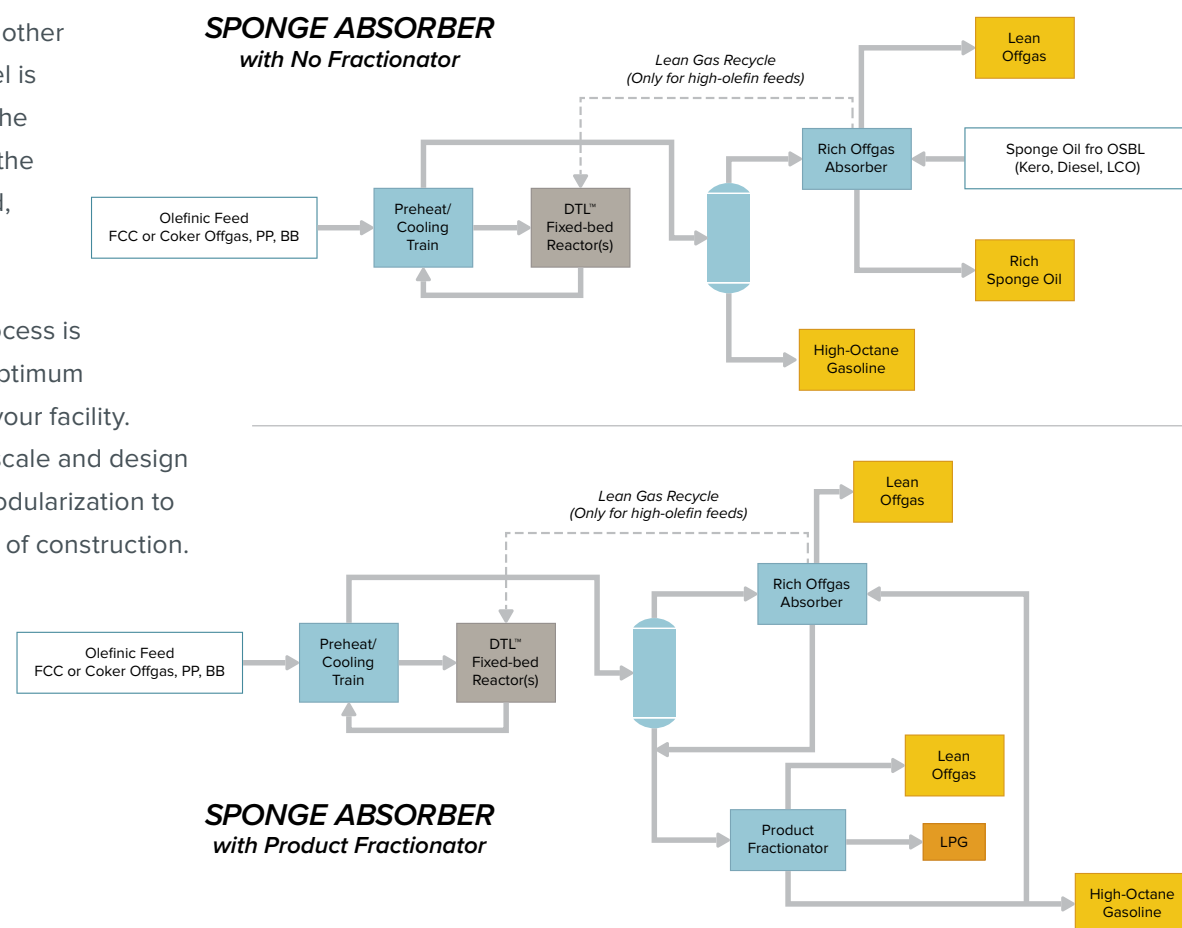
Rather than burning olefins for fuel value, refiners now have an economically viable alternative. Our exclusive DTL technology converts light olefins (ethylene, propylene and/or or butylene) and oxygenates in FCC or coker offgas, FCC or coker LPG, gasified plastic waste, bio-based ethanol, or methanol into high-octane gasoline blend stock (92-94 RON) or aromatic product with high conversion of olefins and yield to C5+ product.

How It Works

The olefins and oxygenates are reacted over a proprietary multifunctional catalyst in a fixed-bed reactor. The mixed olefins are oligomerized and then aromatized. The product effluent is cooled and separated to condense the high-octane gasoline blend stock or aromatics liquid product and the remaining olefin-lean off gas is routed to the fuel gas header.

Natural gas or another supplemental fuel is used to replace the heating value of the olefins converted, if required.

The recovery process is customized for optimum integration with your facility. Typical process scale and design allows for unit modularization to help reduce time of construction.



Benefits

- High olefin and alcohol conversion (>95%) and high C4+ liquid yield (~85%)
- Standard refinery equipment (fixed bed reactor(s), fired heaters, absorption column, etc.), heat integration and a wide operating window
- Compact footprint increases options for facilities siting and supports modular construction
- Low CAPEX
- Low operating pressure (typical FCC wet gas compressor discharge pressure)
- Low utility requirements and carbon intensity due to the exothermic reactions and energy integration
- Customer-focused design to enable maximum octane-barrel production or maximum aromatics yield
- Custom recovery design to enable optimum interface with the existing refinery
- Robust catalyst solutions for handling a broad range of mixed olefin conversions and feed impurities

DTL, At-A-Glance

- Converts light olefins (C2=/C3=/C4=) in FCC/Coker off-gas into high-octane gasoline blend-stock (RON 92-94)
- Economically driven by the spread between the gasoline blend stock value and replacement fuel value
- Provides for both high olefin conversion (>95%) and high C4+ liquid yield (~85% C4+, ~75% C5+). Yield loss is primarily to saturated LPG
- Olefinic LPG can be co-fed
- Ideal for refiners:
 - w/o Cryogenic Recovery
 - Pushing severity and capacity
 - Maximizing C3=production
- 13 commercial units currently in operation
- Multiple product recovery/refinery integration configurations utilizing absorption or refrigeration and either ISBL or OSBL fractionation



About Koch Technology Solutions (KTS)

KTS collaborates with industry leaders to license innovative technologies for refinery optimization and natural gas liquids processing. Leveraging the expertise of Koch Engineered Solutions companies such as Koch-Glitsch, Koch Projects Solutions, Optimized Process Designs and others, we offer our licensees project execution options ranging from Process Design Packages and Services to LSTK.

For more information, visit kochtechsolutions.com.